

ABSTRACT

A gamma camera is provided having an array of photodetectors and associated circuitry for detecting and converting light energy to electrical energy. The gamma camera further includes a scintillation crystal positioned 5 in proximity to the array of photodetectors for detecting gamma photon emissions and generating light energy. At least one portion of at least one surface of the scintillation crystal is polished differently than at least another portion for yielding a substantially different light response function for the generated light energy. That is, the scintillation crystal is non-uniformly 10 polished or has a non-uniform level of smoothness. The non-uniformly polished scintillation crystal improves signal-to-noise ratio and image quality with respect to spatial resolution.